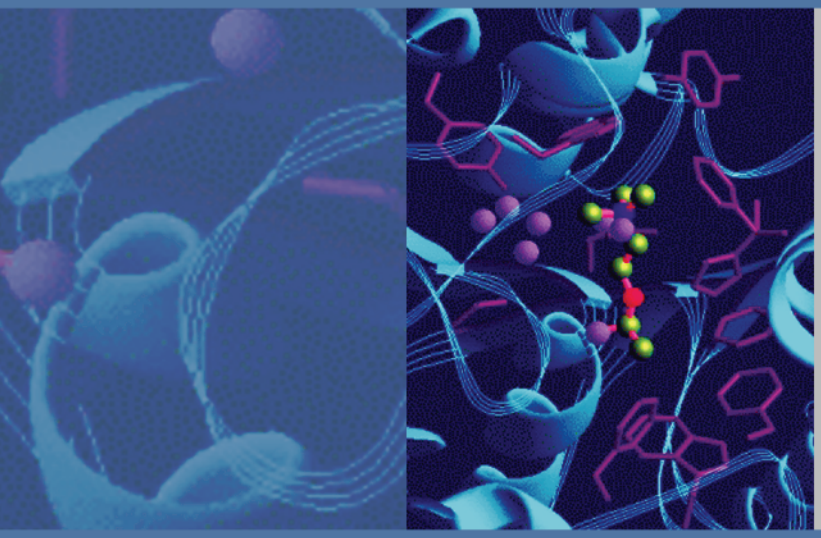

LC Devices

Agilent 1200 Series

Getting Connected Guide

XCALI-97250 Revision A January 2009

DOCUMENTATION FEEDBACK

Thermo SCIENTIFIC

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Preface

About This Guide

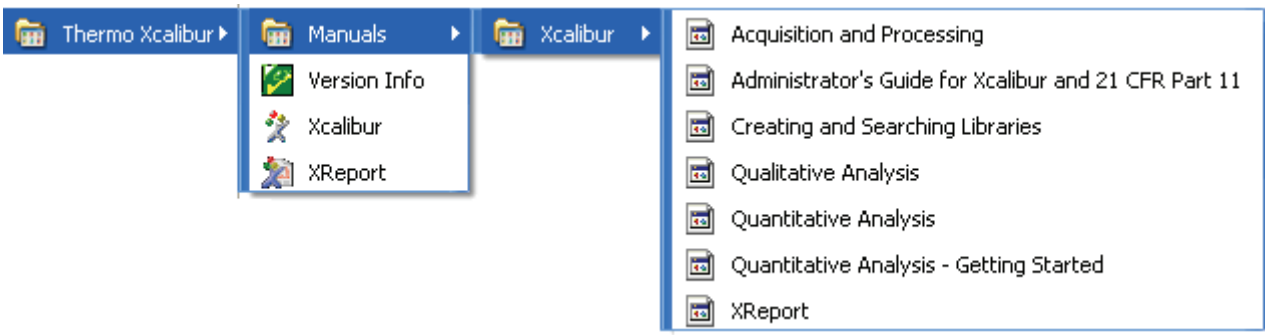
This guide describes how to set up the Agilent 1200 Series LC system to trigger data acquisition from a Thermo Scientific mass spectrometer and how to connect the Agilent 1200 Series LC system to the data system computer through an Ethernet connection.

Related Documentation

The Xcalibur data system provides Help for the Agilent 1200 Series devices from within the Instrument Setup view of the program.

To access this and other Thermo Scientific manuals on your Xcalibur data system computer, do the following:

- For liquid chromatography instruments with device drivers provided on the LC Devices software CD, choose **Start > All Programs > Thermo Instruments > Manuals > LC Devices > [Product Family]**. Then click the PDF that you want to view.
- For the Xcalibur 2.1 manual set, choose **Start > All Programs > Thermo Xcalibur > Manuals > Xcalibur**.



You can also download manuals from the Thermo Fisher Scientific Web site (see "Contacting Us" on page vii).

Safety and Special Notices

Make sure you follow the precautionary statements presented in this guide. The safety and other special notices appear in boxes.

Safety and special notices include the following:

CAUTION Highlights hazards to humans, property, or the environment. Each CAUTION notice is accompanied by an appropriate CAUTION symbol.

CAUTION Highlights electric shock related hazards to human beings. Each electric shock notice is accompanied by the international High Voltage symbol.

IMPORTANT Highlights information necessary to prevent damage to software, loss of data, or invalid test results; or might contain information that is critical for optimal performance of the system.

Note Highlights information of general interest.

Tip Highlights helpful information that can make a task easier.

Safety Precautions

Instructions for installing an external contact interface board are provided in Chapter 4, "Installing the External Contact Interface Board." To avoid damaging the instrument by exposing it to an electrostatic discharge (ESD) and to avoid getting an electric shock by touching a high voltage area of the instrument, make sure that you follow these precautions before you remove the slot cover from the back panel of an Agilent 1200 instrument:

- Turn the power switch to the Off position and unplug the power cable.

CAUTION To avoid an electric shock, always turn off an Agilent module and unplug it from line power before you remove its cover.

- Refer to the manual that came with the module for additional safety information and for information on preventing ESD damage caused by an electrical discharge.

CAUTION To prevent damage to an instrument, always use ESD protection when handling electronic boards and components.

Contacting Us

There are several ways to contact Thermo Fisher Scientific for the information you need.

❖ To contact Technical Support

Phone	800-532-4752
Fax	561-688-8736
E-mail	us.techsupport.analyze@thermofisher.com
Knowledge base	www.thermokb.com

Find software updates and utilities to download at mssupport.thermo.com.

❖ To contact Customer Service for ordering information

Phone	800-532-4752
Fax	561-688-8731
E-mail	us.customer-support.analyze@thermofisher.com
Web site	www.thermo.com/ms

❖ To copy manuals from the Internet

Go to mssupport.thermo.com and click **Customer Manuals** in the left margin of the window.

❖ To suggest changes to documentation or to Help

- Complete a brief survey about this document by clicking the link below. Thank you in advance for your help.

- Send an e-mail message to the Technical Publications Editor at techpubs-lcms@thermofisher.com.

Checking the Firmware Versions of the Agilent Devices

This chapter describes how to check the compatibility of your Agilent 1200 Series system with the device drivers provided on the LC Devices software CD.

Contents

- Supported Firmware Versions
- Checking the Firmware Versions with the Agilent Instant Pilot
- Checking the Firmware Versions from the Xcalibur Data System

Supported Firmware Versions

LC Devices 2.2.1 supports the model numbers and firmware versions of the Agilent 1200 Series modules listed in Table 1.

Table 1. Supported firmware versions for the Agilent 1200 Series LC

Module	Model Number	Firmware Version
Instant Pilot controller		B.02.01 [0003]
Binary pump	G1312A	A.06.02 [001]
Binary pump SL	G1312B	A.06.06[001]
Quaternary pump	G1311A	A.06.04 [001]
HiP-ALS high-performance autosampler	G1367B	A.06.03 [001]
HiP-ALS high-performance autosampler SL	G1367C	A.06.03 [001]
Thermostatted column compartment	G1316A	A.06.04 [001]
Thermostatted column compartment SL	G1316B	A.06.04 [001]
Diode array detector	G1315B	A.06.04 [001]
Diode array detector SL	G1315C	B.01.03 [002]
Diode array detector	G1315D	B.01.04 [0003]

Checking the Firmware Versions with the Agilent Instant Pilot

You can use the Agilent Instant Pilot to check the firmware versions of the Agilent 1200 Series modules to ensure their compatibility with the device drivers provided with LC Devices.

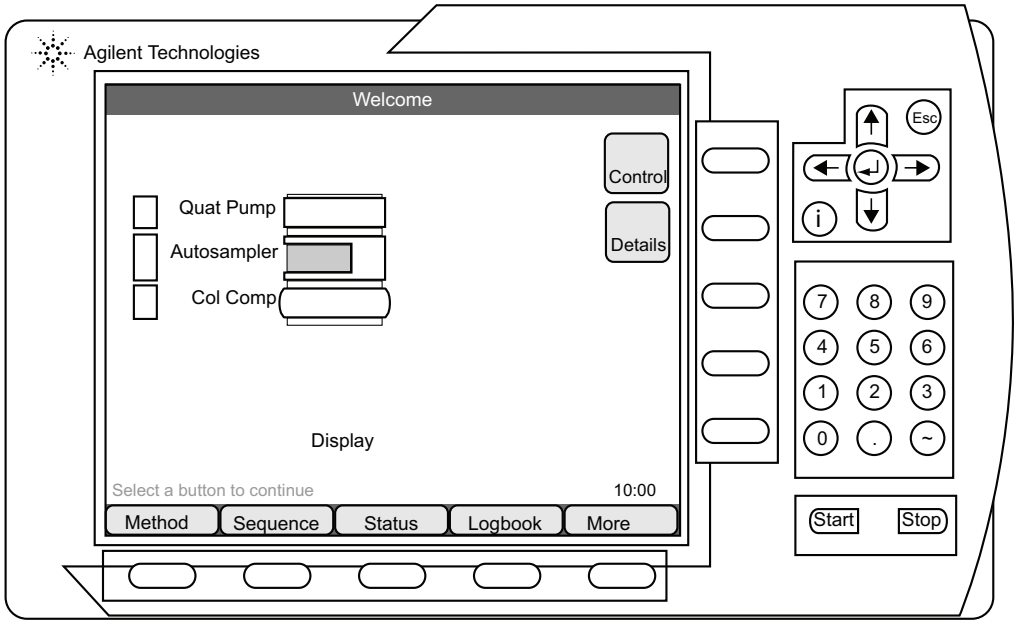
❖ To check the firmware version of an Agilent 1200 Series module

1. Make sure that the Agilent 1200 Series modules are connected by CAN communication cables, that all the modules are turned on, and that the Agilent 1200 Series Instant Pilot is connected.

   For instructions on how to connect the CAN cables, refer to the Agilent 1200 Series LC reference manuals.

2. From the Welcome screen of the Instant Pilot, press the Details key (see Figure 1).

   Figure 1. Welcome screen



   The System Info screen appears. The System Info screen contains information about the firmware versions of the configured system modules.

3. Check the firmware versions against those listed in Table 1 on page 1.

Checking the Firmware Versions from the Xcalibur Data System

Before you can check the firmware versions of the Agilent 1200 Series devices from the Xcalibur data system, you must first establish communication between the devices and the Xcalibur data system.

You can monitor the status of the Agilent devices from the Information view. This view is normally displayed on the left side of the Home Page window. If this view is not displayed, the view has been turned off. To open or close the Information view, choose **View > Info View** to open or close the Information view.

❖ To check the firmware versions of the Agilent devices from the Xcalibur data system

1. Establish communication with the Agilent LC system:
   a. Configure the Agilent LAN interface to use a stored IP address.

      See Chapter 2, "Setting Up the LAN Interface."

   b. Connect the Agilent LAN interface to the data system computer.

      See "Connecting the Ethernet Cables" on page 28).

   c. Specify the instrument configuration options for the Agilent LC devices in the Xcalibur Instrument Configuration window.

      See"Specifying the Configuration Options for the Agilent LC System" on page 16.

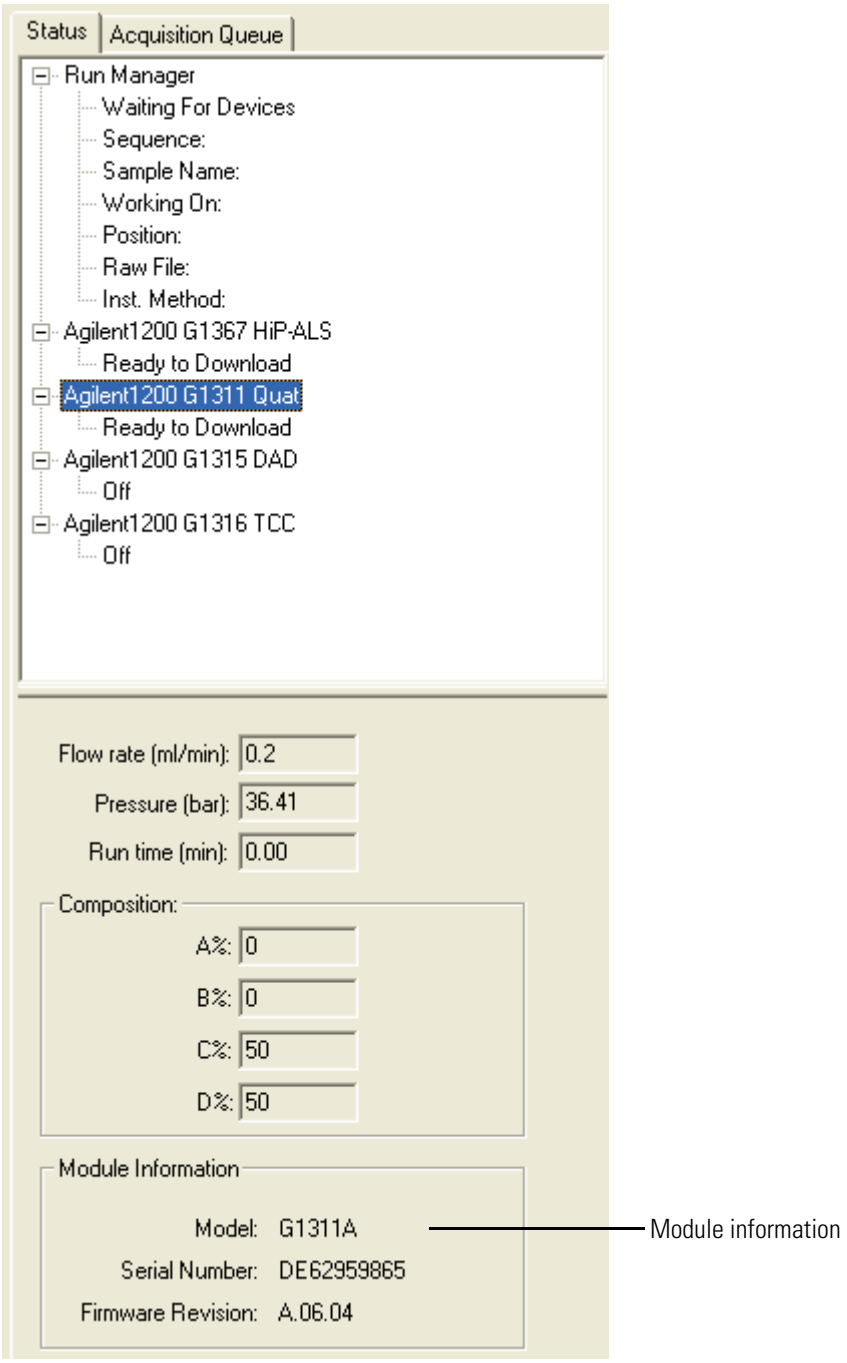
2. Start Xcalibur 2.1 by choosing **Start > All Programs > Thermo Xcalibur > Xcalibur**.

   The Xcalibur Home Page appears.

3. If the Information view is not displayed, open it by choosing **View > Info View**.
4. Click the **Status** tab to display the Status page.
5. Click the device listing to view its status at the bottom of the Status page (see Figure 2).

Note To trigger data acquisition from a Thermo Scientific mass spectrometer, you must install a contact closure board in one of the Agilent devices and connect the board to the Start In pins on the mass spectrometer power panel. See "Installing the External Contact Interface Board" on page 25 and "Connecting the External Contact Trigger Cable" on page 29.

Figure 2. Status page of the Information view



Setting Up the LAN Interface

This chapter describes how to configure the LAN interface for an Agilent 1200 Series LC system. For stable communication with the Xcalibur data system, one device in the Agilent 1200 Series LC system must have either an on-board LAN interface or an Agilent G1369A LAN card. In addition, the initialization mode for the LAN interface must use a stored IP address.

Contents

- Step 1: Determining the Type and Location of the LAN Interface
- Step 2: Setting Up the LAN Interface for a Telnet Session
- Step 3: Setting the Stored TCP/IP Address with a Telnet Session
- Step 4: Setting Up the LAN Interface to Use a Stored IP Address

Step 1: Determining the Type and Location of the LAN Interface

Agilent provides two types of LAN interfaces: an on-board LAN interface that can be ordered as part of an instrument and the Agilent G1369A LAN card that can be ordered separately.

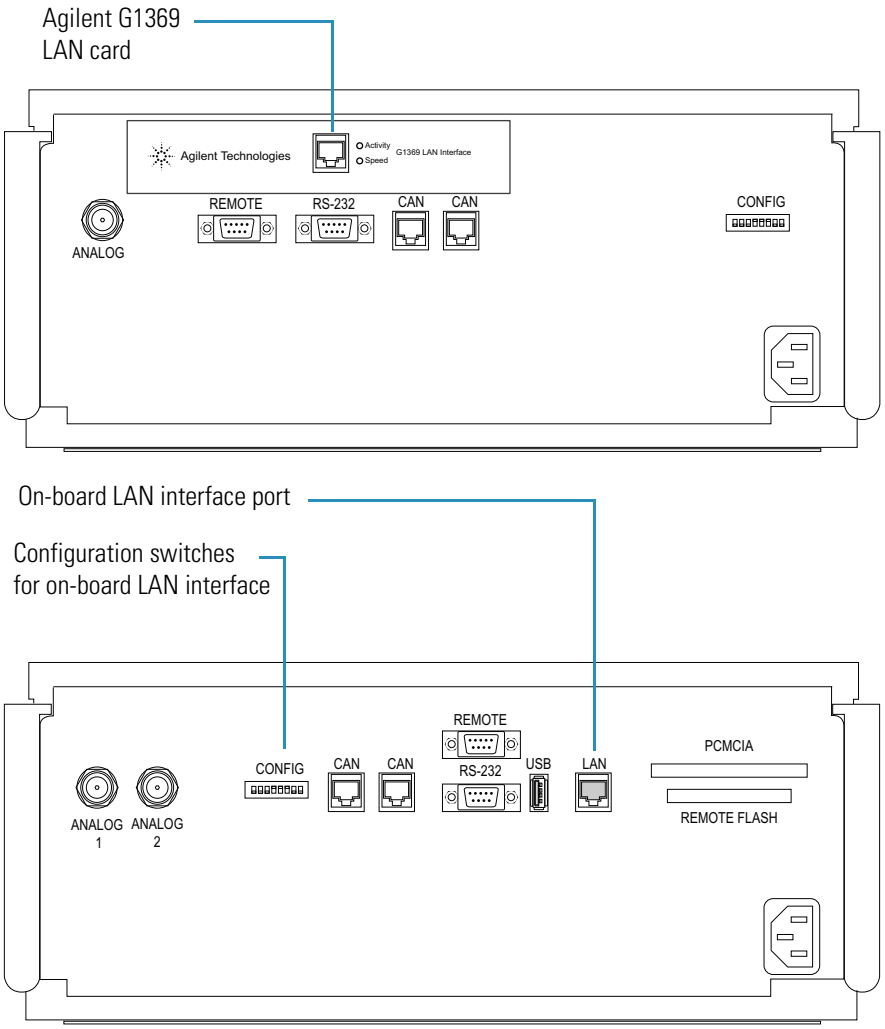
IMPORTANT Do not install more than one LAN card in the Agilent 1200 Series LC system. If one of the devices in the Agilent 1200 Series LC system includes an on-board LAN communication interface, do not install a LAN card.

❖ **To determine which device contains the LAN interface**

1. Check the back panels of the devices in the Agilent 1200 Series stack. One of the devices must contain either an on-board LAN interface or an Agilent G1369A LAN card.

   Figure 3 shows the back panel location of the Agilent LAN interface.

Figure 3. Location of LAN interface



2. If the stack does not have a LAN interface, install the Agilent G1369A LAN card in one of the devices. Refer to the manuals that came with the Agilent 1200 Series LC system for instructions.

Step 2: Setting Up the LAN Interface for a Telnet Session

Before you initiate a Telnet session with the Agilent 1200 Series LAN interface, set up the LAN to use the default IP address for the initialization mode.

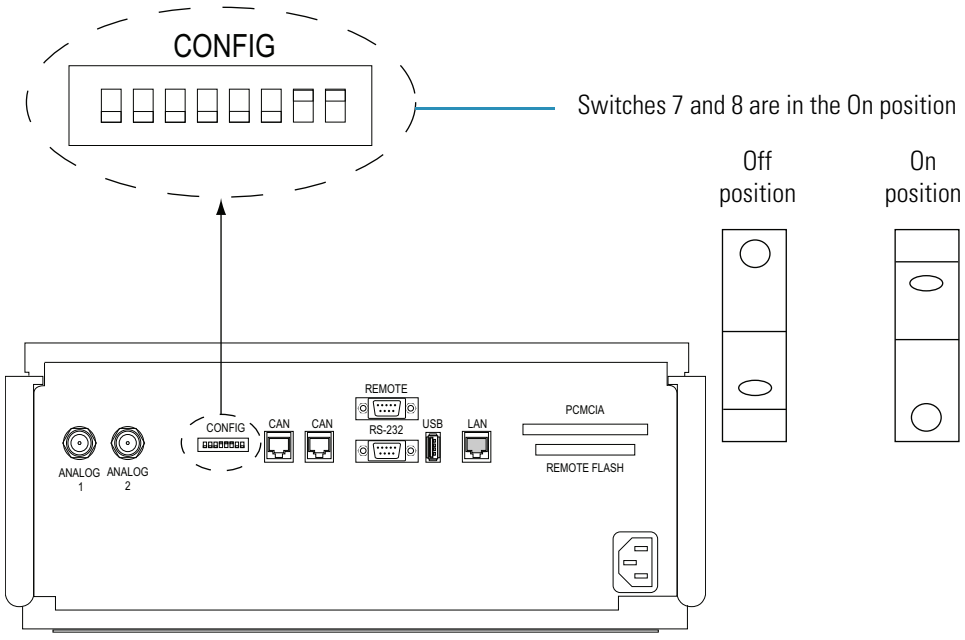
The initialization mode is set with three toggle switches. If your Agilent LC contains an on-board LAN interface, these switches (switches 6, 7, and 8 of the configuration panel) are located on the back panel of the instrument that has the interface (see Figure 4). If your Agilent LC contains an Agilent G1369A LAN card, these switches are located on the LAN card (see Figure 5).

❖ To set up the on-board LAN interface to use the default IP address

Set the initialization switches as follows and as shown in Figure 4:

Switch #	6	7	8
Position	Off	On	On

Figure 4. Initialization switches for the on-board LAN interface (set to default IP address)



❖ To set up the Agilent G1369 A LAN card to use the default IP address

1. Turn off the power to all the Agilent LC modules.
2. Disconnect the device that contains the G1369A LAN card from line power.

CAUTION To avoid an electric shock, always turn off an Agilent module and unplug it from line power before you remove its cover.

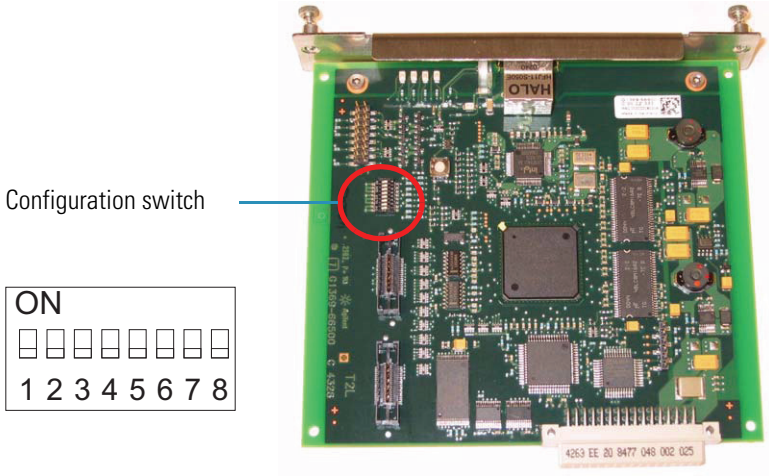
3. If an Ethernet cable is connected to the Ethernet port, disconnect the cable.
4. Ensure that you are wearing ESD protection.

CAUTION To prevent damage to an instrument, always use ESD protection when handling electronic boards and components.

5. Remove the LAN card from the device (refer to the *Agilent G1360A LAN Interface User Manual*).

   The Agilent G1369A LAN card has a configuration switch that can be configured for four initialization modes. The card is shipped with all eight switches set to the Off position, which is the Bootp initialization mode (Figure 5).

Figure 5. Model G1369A LAN card



6. Set up the G1369A LAN card initialization switches as follows:

Switch #	4	5	6
Position	Off	On	On

   With these switch settings, the LAN card uses the factory default settings to enable a TCP/IP connection to the LAN interface with a Telnet session. The default settings are IP address 192.168.254.11 and subnet mask 255.255.0.0.

7. Reinsert the G1369A LAN card and power on the devices in the Agilent1200 LC Stack.
8. Using a category 5 Ethernet cable, connect the G1369A LAN card directly to the data system computer.

Step 3: Setting the Stored TCP/IP Address with a Telnet Session

For an LC/MS system that includes Agilent 1200 Series LC modules and a Thermo Scientific mass spectrometer, the IP address for the Agilent LAN interface must be set to 172.16.0.102.

❖ To set the stored TCP/IP address for the LAN interface to 172.16.0.102

1. Set up the LAN interface initialization switches so that the LAN interface uses the default IP address (see "Step 2: Setting Up the LAN Interface for a Telnet Session" on page 7).
2. Ensure that the LAN interface is connected to the data system computer network card labeled Surveyor MS.
3. Set the TCP/IP address for the data system computer network card to the following:

IP address	192.168.254.100
Subnet mask	255.255.0.0

> **Note** During this procedure, the MS detector temporarily loses communication with the Xcalibur data system.

To set the TCP/IP address for the network card (for the Telnet session):

a. From the Windows taskbar, choose **Start > Control Panel > Network Connection > Local Area Connection**.

The Local Area Connection dialog box appears.

b. On the General page, click **Properties**.

The Internet Protocol (TCP/IP) Properties dialog box appears.

c. Select the **Use the following IP address** option.

d. In the IP address box, type **192.168.254.100**.

e. In the Subnet mask box, type **255.255.0.0**.

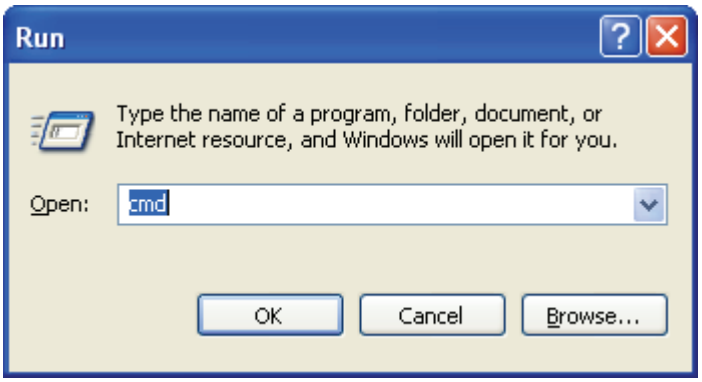
f. Click **OK** to save the settings and close the Internet Protocol (TCP/IP) Properties dialog box.

4. Initiate a Telnet session with the Agilent LAN interface as follows:

a. From the Windows taskbar, choose **Start > Run**.

The Run dialog box appears (see Figure 6).

Figure 6. Run dialog box

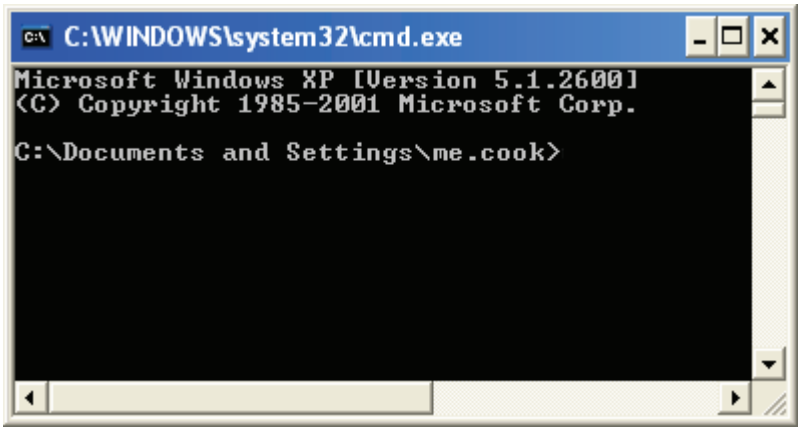


b. In the Open box, type **cmd**.

c. Click **OK**.

The DOS command window appears (see Figure 7).

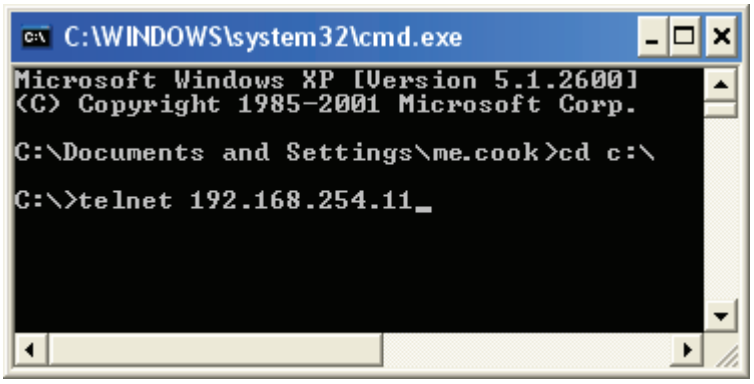
Figure 7. DOS command window



d. At the DOS prompt, type **cd c:**, and then press ENTER.

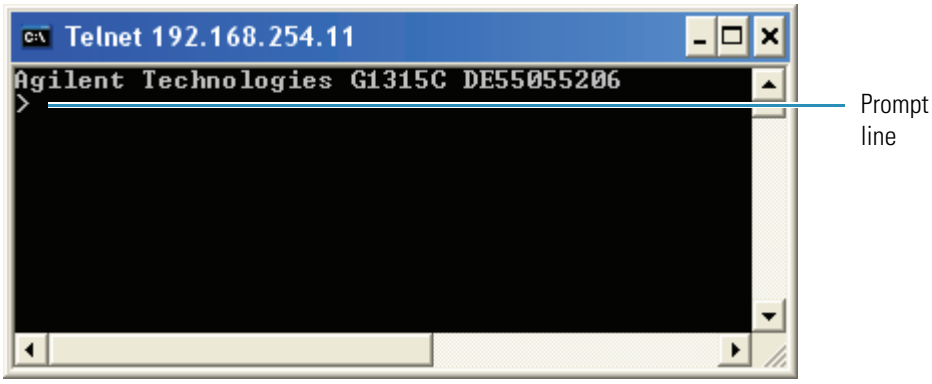
e. At the C:\> prompt, type **telnet 192.168.254.11** (Figure 8).

Figure 8. DOS command window with default IP address



The Telnet session with the Agilent LAN interface begins (Figure 9).

Figure 9. Beginning of a Telnet session with the Agilent LAN interface



5. Set the IP address for the Agilent LAN interface as follows:

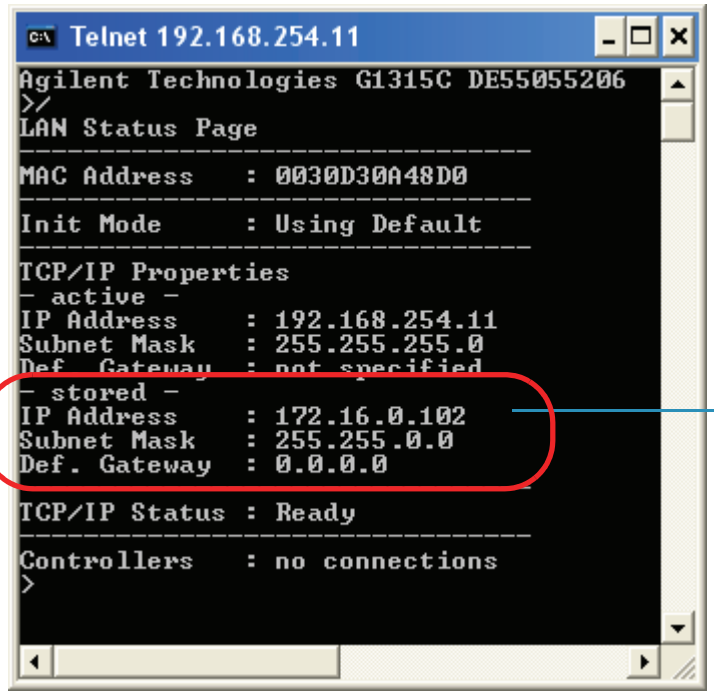
   a. At the prompt (Figure 9), type a slash (/), and then press ENTER to display the current settings of the LAN interface. Figure 10 shows a Telnet session with the LAN Status Page displayed.

      Telnet commands are listed in the following table.

Table 2. Telnet commands

Value	Description
/	Displays current settings.
ip <x.x.x.x>	Sets new IP address.
sm <x.x.x.x>	Sets new subnet mask address.
gw <x.x.x.x>	Sets new gateway address.
quit	Saves changes and exits the shell (for the G1369A LAN card).
exit	Exits shell without saving changes (for the G1369A LAN card) Saves changes and exits the shell (for the on-board LAN interface).

Figure 10. Telnet session with the LAN Status Page



b. If the stored IP address is not set to 172.16.0.102, at the prompt, type **ip 172.16.0.102**. Then press ENTER.

c. If the stored subnet mask is not set to 255.255.0.0, at the prompt, type **sm 255.255.0.0**. Then press ENTER.

d. To verify the IP address and subnet mask settings, type a slash (/), and then press ENTER to display the current settings of the LAN interface.

6. To exit the Telnet session, do one of the following:

   - For the on-board LAN interface, type **Exit** at the prompt.
   - For the G1369 LAN card, type **Quit** at the prompt.

7. After exiting the Telnet session, set the TCP/IP address for the data system computer network card (labeled Surveyor MS) back to the following (see Figure 11):

IP address	172.16.0.101
Subnet mask	255.255.0.0

To set the TCP/IP address for the network card to communicate with Xcalibur:

a. Open the Internet Protocol (TCP/IP) Properties dialog box (see step 3a and step 3b on page 9).

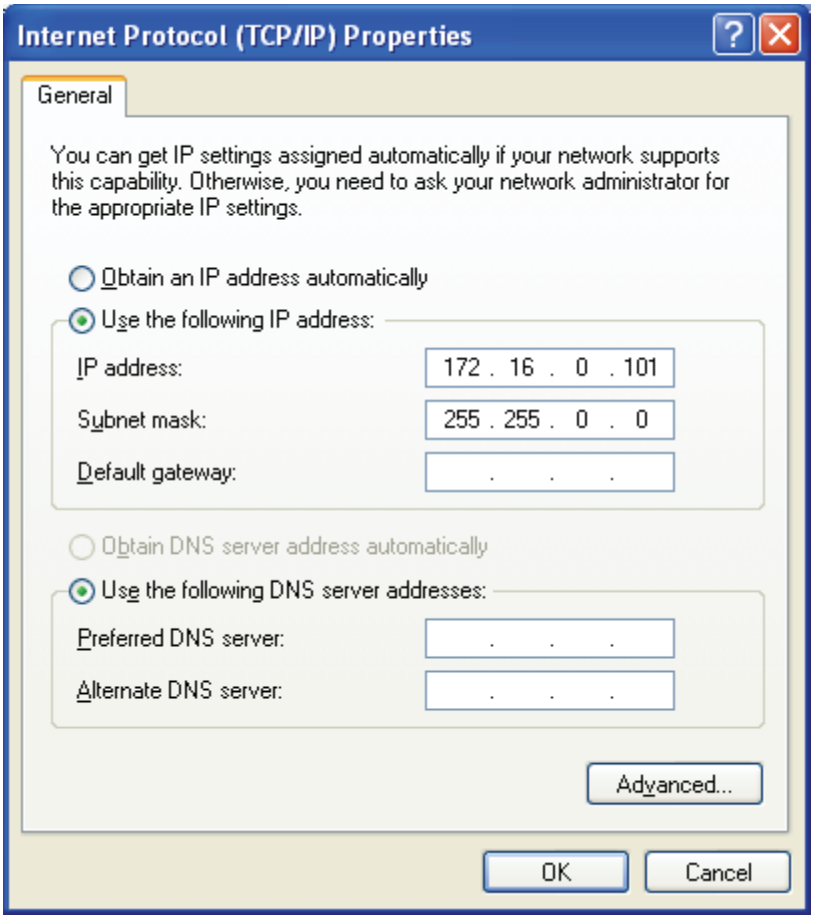
b. In the IP address box, type **172.16.0.101**.

c. In the Subnet mask box, type **255.255.0.0**.

d. Click **OK** to save the settings and close the Internet Protocol (TCP/IP) Properties dialog box.

Figure 11 shows the appropriate IP address for the network card in the data system computer.

Figure 11. Internet Protocol (TCP/IP) Properties dialog box


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 172 . 16 . 0 . 101
Subnet mask: 255 . 255 . 0 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

e. Exit the Control Panel.

After setting the stored IP address and subnet mask for the Agilent LAN interface, you are ready to set up the LAN interface initialization switches so that the LAN interface uses the stored IP address. See "Step 4: Setting Up the LAN Interface to Use a Stored IP Address" on page 14.

Step 4: Setting Up the LAN Interface to Use a Stored IP Address

For the LAN interface to use the stored IP address that you set with a Telnet session, set the initialization mode to use a stored IP address setting. The initialization mode is set with three toggle switches.

❖ **To set the on-board LAN interface initialization mode to use a stored IP address**

Set the initialization switches on the back panel of the instrument as follows:

Switch #	6	7	8
Position	Off	On	Off

The On position for the toggle switch is up and the Off position is down.

❖ **To set the Agilent G1369 A LAN card initialization mode to use a stored IP address**

CAUTION To avoid an electric shock, always turn off an Agilent module and unplug it from line power before you remove its cover.

1. Turn off the instrument that has the LAN card and unplug the instrument from line power.
2. Remove the LAN card (see Figure 5 on page 8) from the instrument (refer to the *Agilent G1369A LAN Interface User Manual*).
3. Set the initialization switches to the initialization mode that uses a stored IP address as follows:

Switch #	4	5	6
Position	Off	On	Off

The On position for the toggle switch is up and the Off position is down.

4. Reinstall the Agilent G1369A LAN card.
5. Connect the category 5 Ethernet cables as described in "Connecting the Ethernet Cables" on page 28.
6. Reconnect the module to line power and turn on the module.

Setting Up the Xcalibur Instrument Configuration

This chapter describes how to add the Agilent 1200 Series devices to the Xcalibur instrument configuration and specify their configuration options.

Contents

- The Agilent 1200 Series LC System IP Address
- The Contact Closure Board
- Specifying the Configuration Options for the Agilent LC System

The Agilent 1200 Series LC System IP Address

When you specify the configuration options for the Agilent 1200 Series LC system, you specify the IP address for the entire stack.

You enter the stack IP address for the Agilent 1200 Series LC system when you configure the devices. Once you enter the stack IP address for one device, this IP address appears in the configuration dialog box for each connected device.

Table 3 lists the IP address for an LC/MS system with a Thermo Scientific mass spectrometer.

IMPORTANT To maintain stable communication with the Xcalibur data system, the Agilent LAN interface must be set up to use a stored IP address. For information on configuring the Agilent LAN interface to use a stored IP address, see Chapter 2, "Setting Up the LAN Interface."

Table 3. IP addresses for an Agilent 1200 Series LC/Thermo Scientific MS system

System Setup	IP Address
LC/MS system with a Thermo Scientific mass spectrometer	172.16.0.102

The Contact Closure Board

To trigger data acquisition during a sequence run, one of the Agilent 1200 Series devices must have an external contact closure board. When you specify the configuration options for the LC system, select the Contact board installed check box for the device that has the board. For instructions on installing the external contact board, see Chapter 4, "Installing the External Contact Interface Board."

Specifying the Configuration Options for the Agilent LC System

To specify the configuration options for the Agilent 1200 Series LC system, follow these procedures:

- Step 1: Opening the Xcalibur Instrument Configuration Program
- Step 2: Adding Devices to the Instrument Configuration
- Step 3: Specifying the Configuration Options for the Devices
- Step 4: Closing the Xcalibur Instrument Configuration Program

Step 1: Opening the Xcalibur Instrument Configuration Program

❖ **To open the Xcalibur Instrument Configuration program**

1. If you have not already done so, install LC Devices.
2. Choose **Start > All Programs > Thermo Foundation 1.0 > Instrument Configuration**.

   The Thermo Foundation Instrument Configuration dialog box appears.

Step 2: Adding Devices to the Instrument Configuration

LC Devices 2.2.1 contains instrument control software for these Agilent 1200 series devices:

- Agilent HiP-ALS
- Agilent 1200 Series Quaternary Pump
- Agilent 1200 Series Binary Pump
- Agilent 1200 Series Thermostatted Column Compartment
- Agilent 1200 Series Diode Array Detector.

IMPORTANT Do not add Agilent 1100 Series devices to the instrument configuration for an Agilent 1200 Series stack. Xcalibur does not support the simultaneous control of Agilent 1100 and 1200 Series devices.

❖ **To add devices to the instrument configuration**

1. If you have not already done so, open the Instrument Configuration program.
2. Under Available Devices, double-click the icon for the device that you want to add. Or, click the icon for the device that you want to add, and then click **Add**.

   A duplicate of the device icon appears under Configured Devices.

Step 3: Specifying the Configuration Options for the Devices

To specify the configuration options for the Agilent 1200 Series devices that Xcalibur supports, follow these procedures:

- Configuring the Agilent 1200 Series HiP-ALS
- Configuring the Agilent 1200 Series Pump
- Configuring the Agilent 1200 Series TCC
- Configuring the Agilent 1200 Series Diode Array Detector

Configuring the Agilent 1200 Series HiP-ALS

Use the Agilent 1200 HiP-ALS dialog box to specify the module name; the stack IP address; configurable instrument options such as the syringe, seat capillary, and loop capillary size; the tray type you are using; and whether the system has an optional thermostat unit.

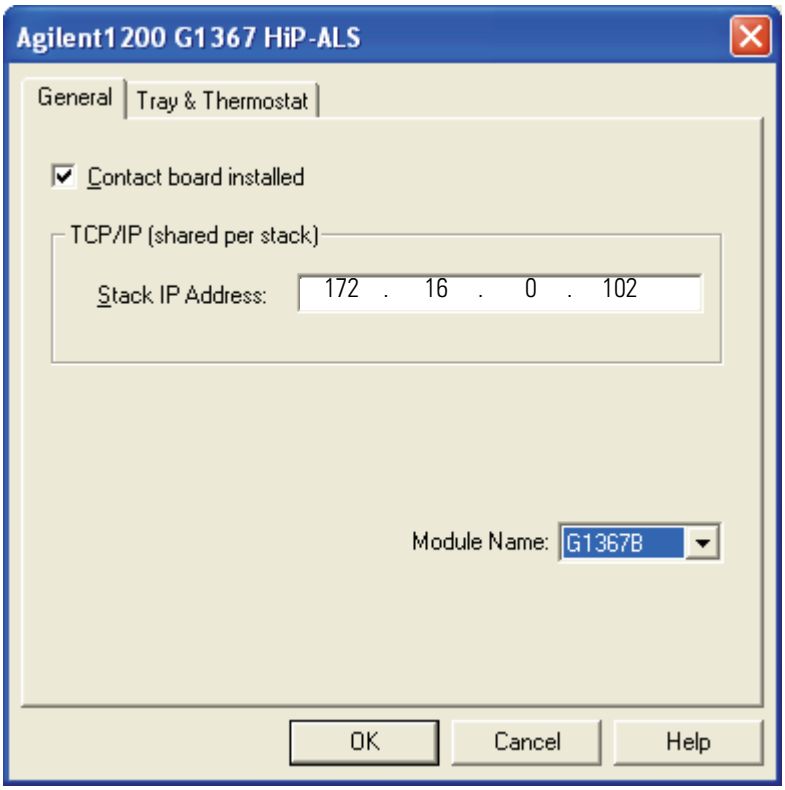
❖ **To specify the configuration options for the Agilent 1200 Series HiP-ALS**

1. Under Configured Devices, double-click

   The Agilent 1200 G1367 HiP-ALS dialog box appears.
2. Click the **General** tab.

   The General page appears (see Figure 12).

Figure 12. Agilent1200 HiP-ALS dialog box with the stack IP address set to the default



3. On the General page, make the appropriate selections:

   - If you have installed the external contact interface board in the autosampler, select the **Contact board installed** check box.

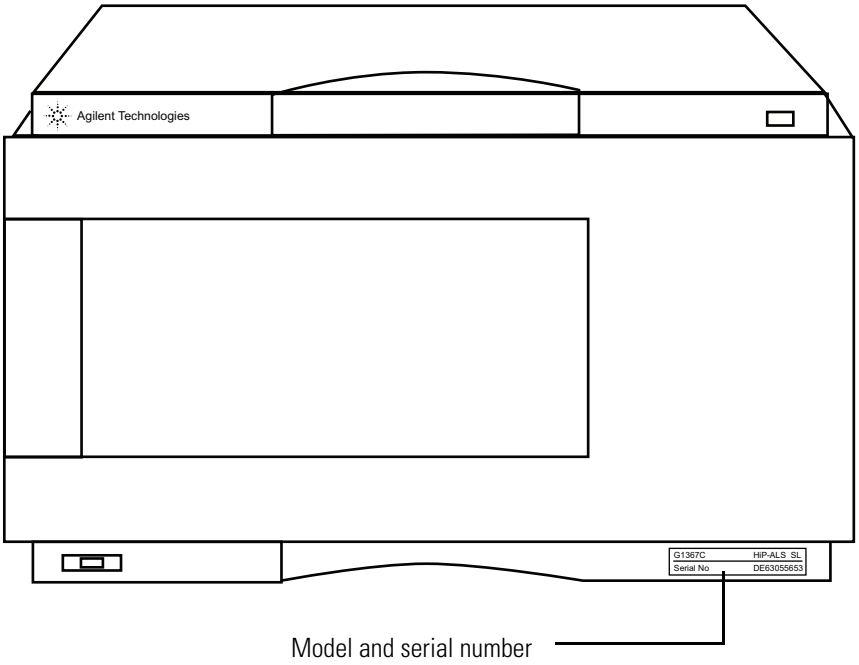
     Note When you select the Contact Board Installed check box, the Timed Events page appears in the Instrument Setup view for the autosampler. See Chapter 6, "Setting Up the Instrument Method to Trigger Data Acquisition."

   - In the Stack IP Address box, make sure that the IP address is correct for your system setup. See Table 3 on page 15.

     Note The TCP/IP settings are shared by all Agilent 1200 LC modules in the stack. Changing the value of a setting for one module in the Instrument Configuration dialog box changes the value of that setting for all modules in the stack.

   - In the Module Name list, select the model number that is stamped on the front panel, lower-right corner of the Agilent device (see Figure 13).

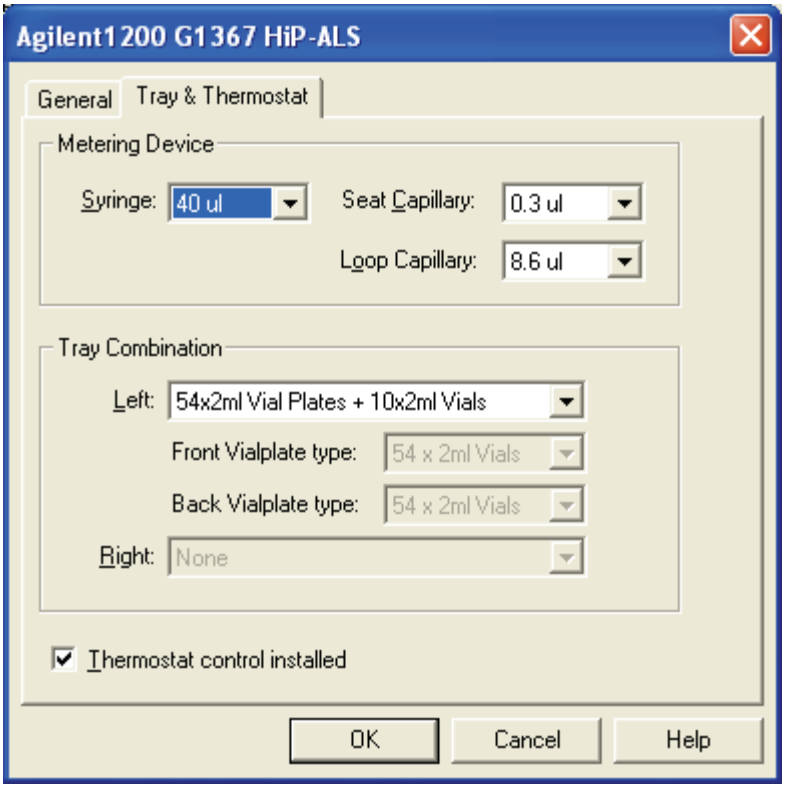
Figure 13. View of the model and serial number for an Agilent 1200 Series device



4. Click the **Tray & Thermostat** tab.

   The Tray & Thermostat page appears (see Figure 14).

Figure 14. Tray & Thermostat page



5. On the Tray & Thermostat page, make the appropriate selections:
   - Under Metering Device, make the appropriate size selections from the Syringe, Seat Capillary, and Loop Capillary lists.
   - Under Tray Combination, select the tray type that you plan to use. For information on the vial and tray locations for the available tray combinations, see Chapter 7, "Vial and Well Locations for the Available Tray Types."
   - If the Agilent stack has a thermostat module (G1330B), select the **Thermostat control installed** check box.
6. Click **OK** to save the settings and close the dialog box.

Configuring the Agilent 1200 Series Pump

Use the configuration dialog box for the pump to specify its serial number and model number. For the binary pump, you can also specify whether the system has the optional selection valve installed.

IMPORTANT Be sure to enter the correct serial number when you configure the pump; otherwise, the Xcalibur data system cannot communicate with the pump.

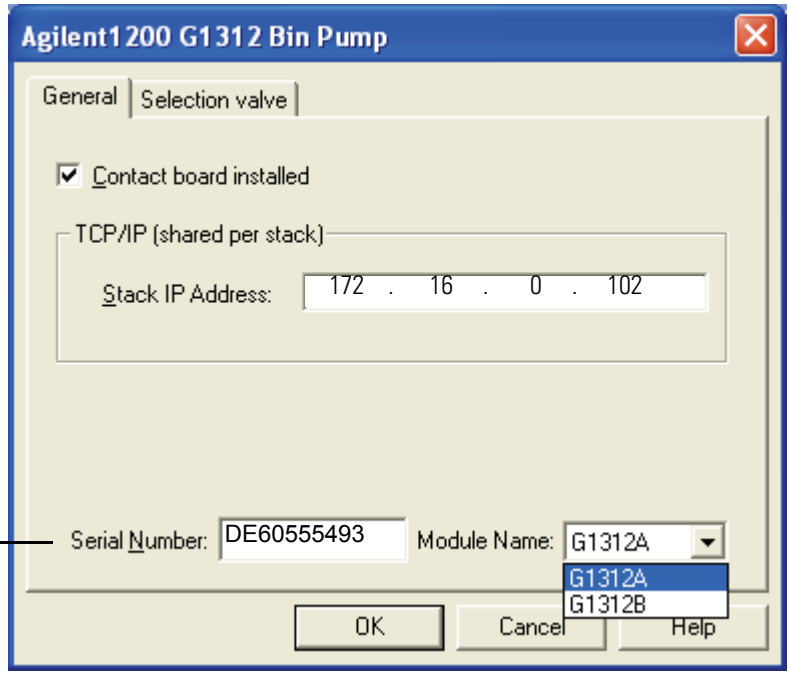
❖ To specify the configuration options for the pump

1. Under Configured Devices, double-click the button for the Agilent 1200 Series pump:
   - For the binary pump, double-click .
   - For the quaternary pump, double-click .

   The Agilent 1200 G1312 Bin or Agilent 1200 G1311 Quat dialog box appears.
2. Click the **General** tab.

   The General page appears. Figure 15 shows the General page for the binary pump.

Figure 15. Agilent1200 G1312 Bin Pump dialog box



Make sure you enter the correct serial number in this box, so that Xcalibur can communicate with the pump.

3. On the General page, make the appropriate selections and entries.

   - If you have installed the external contact interface board in the pump, select the **Contact board installed** check box.

     Note When you select the select the Contact board installed check box, the Timed Events page appears in the Instrument Setup view for the pump. See Chapter 6, "Setting Up the Instrument Method to Trigger Data Acquisition."

   - In the Stack IP Address box, make sure that the IP address is correct for your system setup. See Table 3 on page 15.

     Note The TCP/IP settings are shared by all Agilent 1200 LC modules in the stack. Changing the value of a setting for one module in the Instrument Configuration dialog box changes the value of that setting for all modules in the stack.

   - In the Serial Number box, type the serial number of the Agilent pump.

     Because you can configure two pumps per stack, you must type the correct serial number to initiate communication between the pump and the Xcalibur data system.

   - In the Module Name list for the binary pump, select the model number that is stamped on the front panel, lower-right corner of the Agilent module (see Figure 13 on page 19).

Note The Module Name list for the quaternary pump contains one selection, G1311A.

4. For the binary pump, if your stack has an optional selection valve, click the **Selection Valve** tab and select the **Solvent selection valve installed** check box.
5. Click **OK** to save the settings and close the dialog box.

Configuring the Agilent 1200 Series TCC

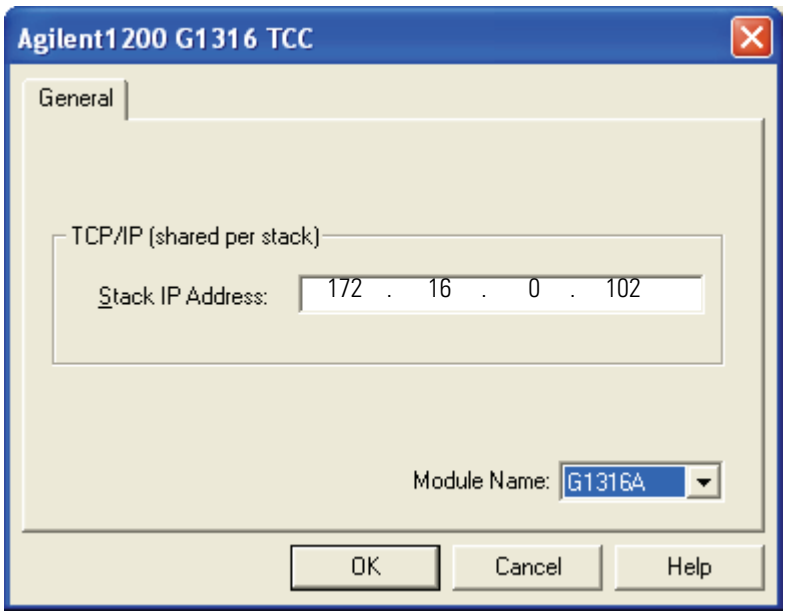
Use the Agilent 1200 G1316 TCC dialog box to select the model number of the Agilent 1200 Series Thermostatted Column Compartment.

❖ To specify the configuration options for the Thermostatted Column Compartment

1. Under Configured Devices, double-click .

   The Agilent 1200 G1316 TCC dialog box appears (Figure 16).

Figure 16. Agilent 1200 G1316 TCC dialog box



2. On the General page, do the following:

   - In the Stack IP Address box, make sure that the IP address is correct for your system setup. See Table 3 on page 15.

     Note The TCP/IP settings are shared by all Agilent 1200 LC modules in the stack. Changing the value of a setting for one module in the Instrument Configuration dialog box changes the value of that setting for all modules in the stack.

   - In the Module Name list, select the model number of the TCC.

     The model number is stamped on the front panel, lower-right corner of the device (see Figure 13 on page 19).

3. Click **OK** to save the settings and close the dialog box.

Configuring the Agilent 1200 Series Diode Array Detector

Use the Agilent 1200 G1315 DAD dialog box to specify the model number of the diode array detector.

❖ To specify the configuration options for the diode array detector

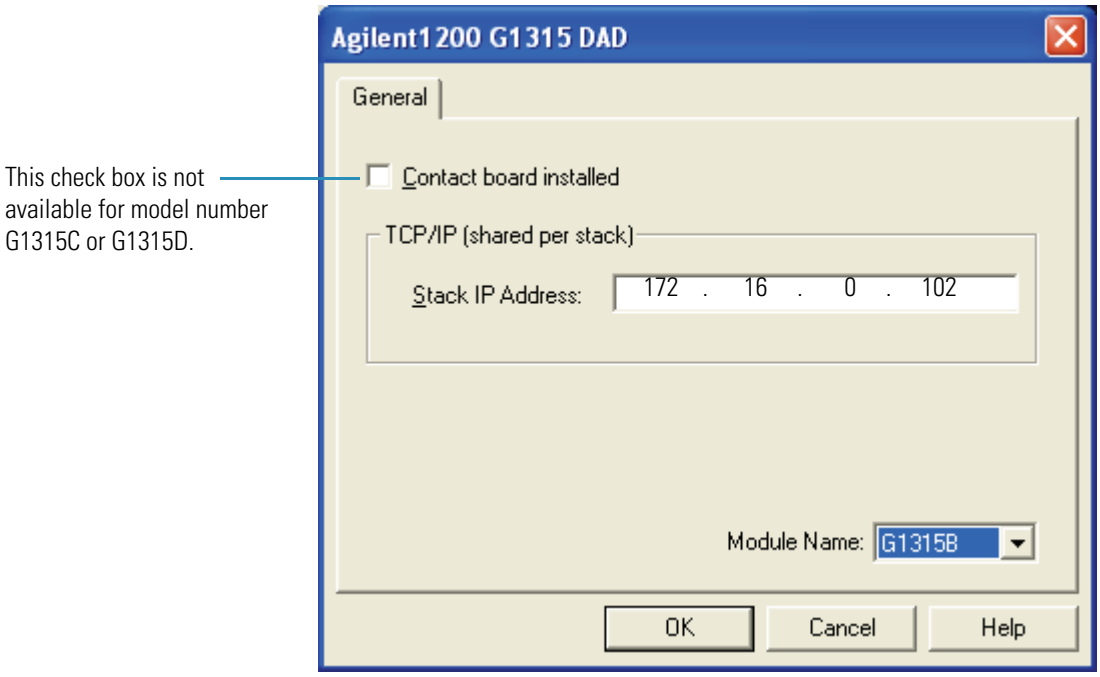
1. Under Configured Devices, double-click

.

   The Agilent 1200 G1315 DAD dialog box appears (see Figure 17).

   Note You cannot install an external contact board in the G1315C or G1315D versions of the Agilent 1200 Series DAD.

Figure 17. Agilent 1200 G1315 DAD dialog box with the parameters for G1315B



2. On the General page, do the following:

   - In the Stack IP Address box, make sure that the IP address is correct for your system setup. See Table 3 on page 15.

     Note The TCP/IP settings are shared by all Agilent 1200 LC modules in the stack. Changing the value of a setting for one module in the Instrument Configuration dialog box changes the value of that setting for all modules in the stack.

   - In the Module Name list, select the model number of the detector.

     The model number is stamped on the front panel, lower-right corner of the device (see Figure 13 on page 19).

Step 4: Closing the Xcalibur Instrument Configuration Program

Before opening the Xcalibur data system, close the Xcalibur Instrument Configuration program. You cannot have both programs open at the same time.

❖ **To close the Xcalibur Instrument Configuration program**

When you finish specifying the configuration options for the Agilent LC system, click **Done** to close the Xcalibur Instrument Configuration program.

Installing the External Contact Interface Board

To send a trigger signal from the Agilent LC system to a Thermo Scientific mass spectrometer, the Agilent 1200 Series pump or autosampler must have an external contact interface board.

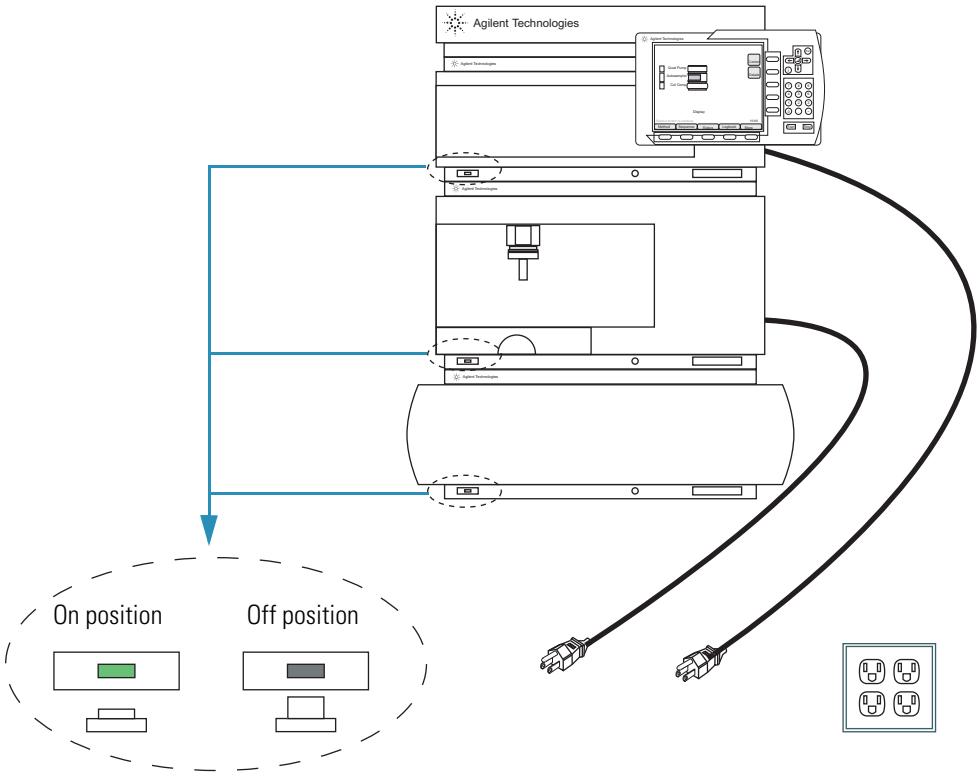
Refer to the manuals supplied with the Agilent 1200 Series devices for information on ordering the BCD board.

❖ To install the external contact interface board

1. Turn off the power to the device by placing the power switch in the Off position (Figure 18).

CAUTION To avoid electric shock, unplug the power cable that connects the Agilent device to line power. After you turn the power switch to the Off position, the power supply continues to draw current.

Figure 18. View of the power switches on the front of the Agilent 1200 Series devices

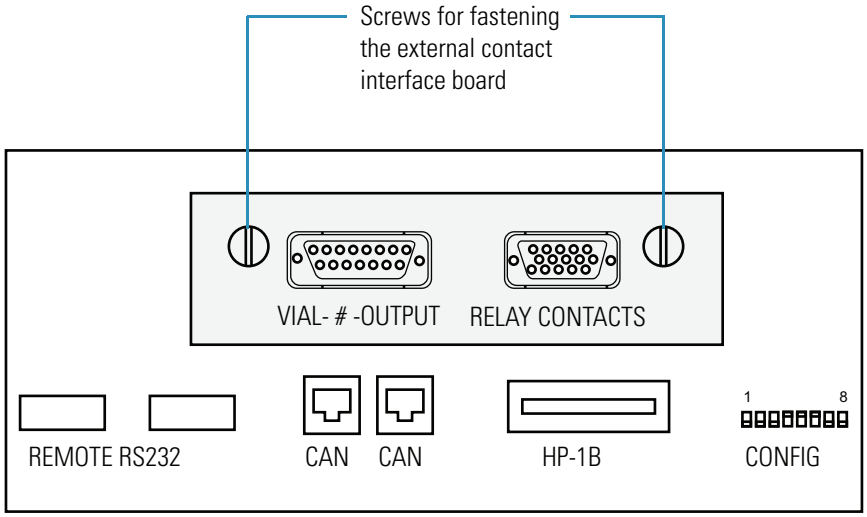


2. Unplug the power cable that connects the device to line power.
3. To prevent damage to the contact closure board, make sure that you are using ESD protection. For more information on preventing damage caused by an electric discharge, refer to the manual that came with the Agilent device.

CAUTION To prevent damage to an instrument, always use ESD protection when handling electronic boards and components.

4. To remove the cover plate from the slot where you plan to install the external contact interface board, loosen the two screws that fasten the plate to the chassis of the module.
5. Insert the external contact interface board into the slot, and then tighten the two screws to fasten the board to the chassis of the module (Figure 19).

Figure 19. View of the external contact interface board (BCD board) installed in an Agilent 1200 Series pump or autosampler



You have completed the installation of the external contact interface board.

6. To trigger data acquisition from the Thermo Scientific mass spectrometer:
   a. Connect the external contact trigger cable.
   b. When you configure this device from the Instrument Configuration program, make sure that you select the **Contact board installed** check box.
   c. When you create an instrument method for your LC/MS system, make sure that you create an appropriate time program for the trigger signal (see Chapter 6, "Setting Up the Instrument Method to Trigger Data Acquisition.")

Connecting the Ethernet and Trigger Cables

This chapter describes how to connect the Agilent 1200 Series LC devices to the data system computer and how to make the contact closure connection between the LC stack and a Thermo Scientific mass spectrometer.

Contents

- Ethernet Communication Kit
- Connecting the Ethernet Cables
- Connecting the External Contact Trigger Cable

Ethernet Communication Kit

To connect an Agilent 1200 Series LC to your Thermo Scientific MS detector, you must have the following parts:

- The parts supplied in the Ethernet Communication kit (see Table 4)
- An Agilent LAN card, model number G1369A, unless your Agilent LC system contains a device with an on-board LAN communication interface (see Figure 20)
- A BCD board supplied by Agilent for contact closure

Table 4. Ethernet Communication kit (P/N OPTON 30012)

Description	Part Number
Ethernet switch	00825-01-00024
Cable, trigger external contact, 2-wire DB15	00012-27716
Cable, patch, 3 m (10 ft) CAT5 RJ45, straight shield	00012-70008

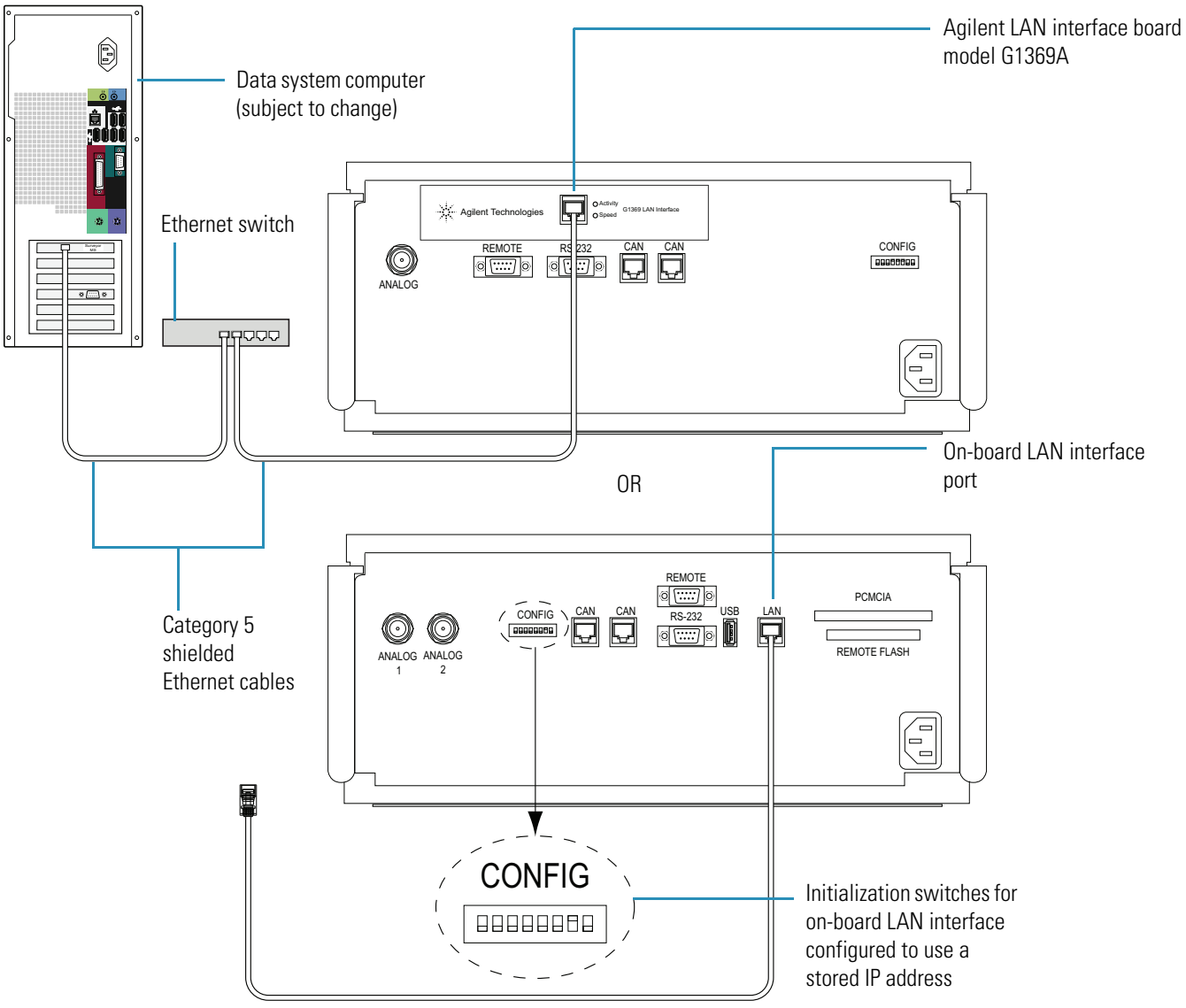
Connecting the Ethernet Cables

CAUTION To ensure compliance with safety and EMC regulations, use the Ethernet cables supplied in the Ethernet Communication kit or category 5, shielded Ethernet cables no longer than 3 m (10 ft) in length.

❖ To connect the Ethernet communication cable to an Agilent 1200 Series LC

1. Connect a category 5, shielded Ethernet cable from the Agilent LAN interface to the Ethernet switch (Figure 20).
2. Connect an Ethernet cable from the Ethernet switch to the network card dedicated to the LC/MS system (typically network interface card number 3).

Figure 20. Ethernet connections



Connecting the External Contact Trigger Cable

An external contact trigger cable relays the start signal from the Agilent 1200 Series device to the Thermo Scientific mass spectrometer. One end of the cable has a DB15 connector and the other end of the cable has a set of exposed wires.

Note The instrument control application for the Thermo Scientific mass spectrometer must be compatible with the LC Devices instrument control application, and the instrument control applications must be compatible with the Xcalibur application installed on your data system computer.

❖ To connect the external contact trigger cable to the Agilent device and the mass spectrometer

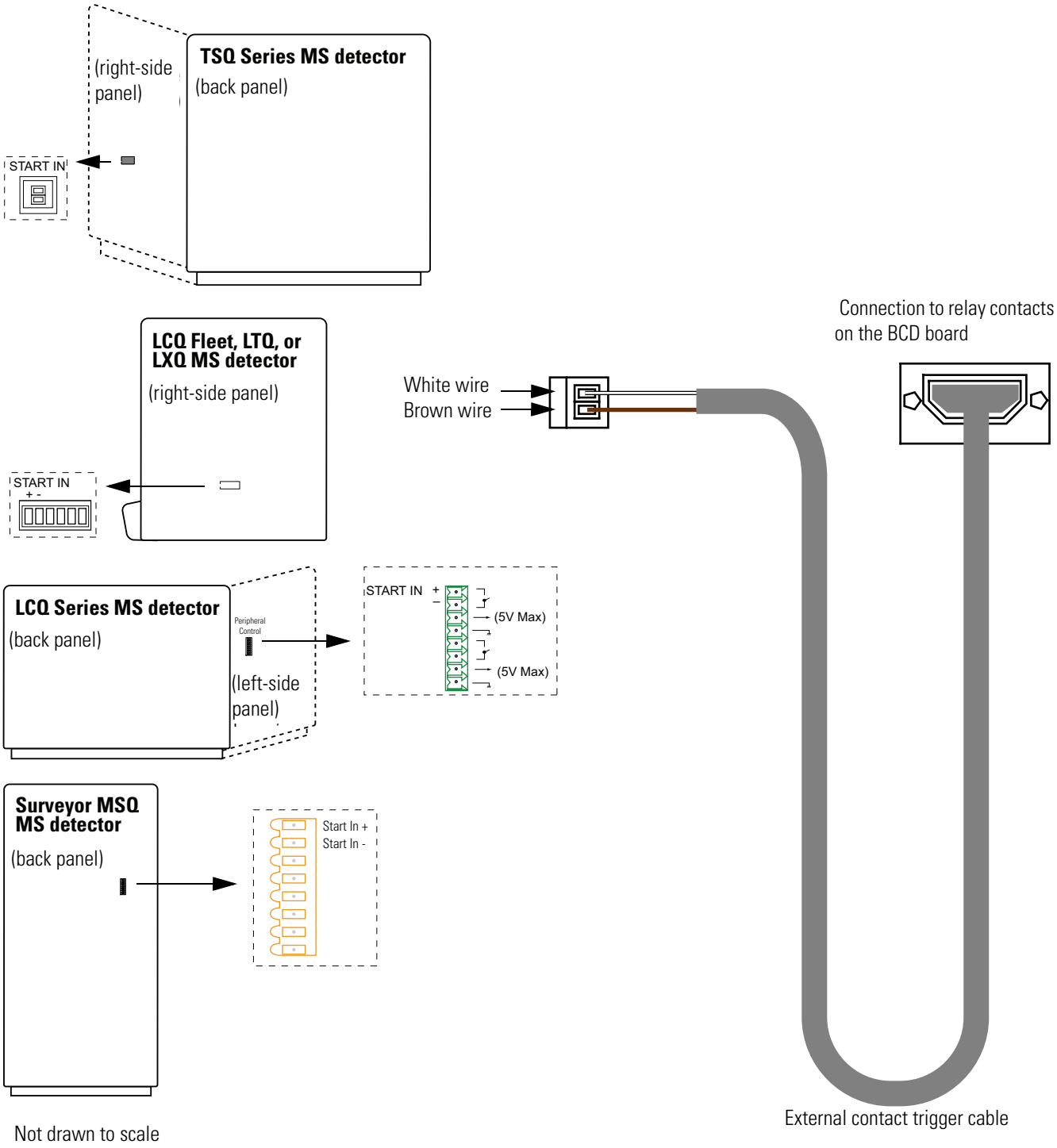
1. If you have not already done so, install the external contact interface board.

   See Chapter 4, "Installing the External Contact Interface Board."

2. Connect the white wire to the Start In+ pin and the brown wire to the Start In– pin on the I/O panel of the mass spectrometer (see Figure 21).

3. Connect the DB15 connector to the RELAY CONTACTS receptacle located on the external contact interface board of the Agilent 1200 Series device (see Figure 21).

Figure 21. Connections for the external contact trigger cable



Setting Up the Instrument Method to Trigger Data Acquisition

During a run, the LC system triggers the mass spectrometer to start acquiring data. This procedure describes how to set up the instrument method for your LC/MS system so that the Agilent device with the external contact interface board sends a start signal to the mass spectrometer.

If you have not already installed the external contact interface board, start with these procedures:

- "Installing the External Contact Interface Board" on page 25
- "Connecting the External Contact Trigger Cable" on page 29

Note Instrument methods contain the contact closure signals (to trigger data acquisition), the chromatographic conditions, and the mass spectrometer settings for an LC/MS application.

❖ To trigger data acquisition during a run

1. Choose **Start > All Programs > Thermo Xcalibur > Xcalibur.**

   The Home Page appears.

2. Click the **Instrument Setup** icon.

   The Instrument Setup window appears.

3. In the Instrument Setup viewbar, click the icon for the device in the Agilent 1200 Series LC system that has a contact interface board.

   The Instrument Setup view for the device appears.

4. Click the **Timed Events** tab.

   The Timed Events page appears unless you did not select the Contact board installed check box when you configured the device. If this page is not available, close Xcalibur and follow the instructions in "Step 3: Specifying the Configuration Options for the Devices" on page 17.

5. On the Timed Events page, select the appropriate contact closure signal settings (Figure 22):
   a. Click the **Contact A** box to display the list and select **Closed**.
   b. In row 2 of the Time column, click the box, and then type **0.1**.
   c. Make sure that all the other Contact boxes display **Open**.

   Figure 22. Timed Events page

6. Make the appropriate entries and selections for the rest of the instrument method.
7. Save the instrument method with an appropriate name.

Vial and Well Locations for the Available Tray Types

This chapter describes the vial and well locations for the tray types available from Xcalibur.

Contents

- 40-Vial Trays
- 100-Vial Trays
- 54-Vial Plates
- 96-Well Plates or 96-Deep Well Plates (Agilent Only)
- 384-Well Plates (Agilent Only)

Note Left/Back is the factory default setting for the orientation of plates (plate rotation setting). For the Left/Back plate rotation, the A1 well location is at the left back of the plate. You can change the plate rotation to Right/Front using the Agilent 1200 Series Instant Pilot.

40-Vial Trays

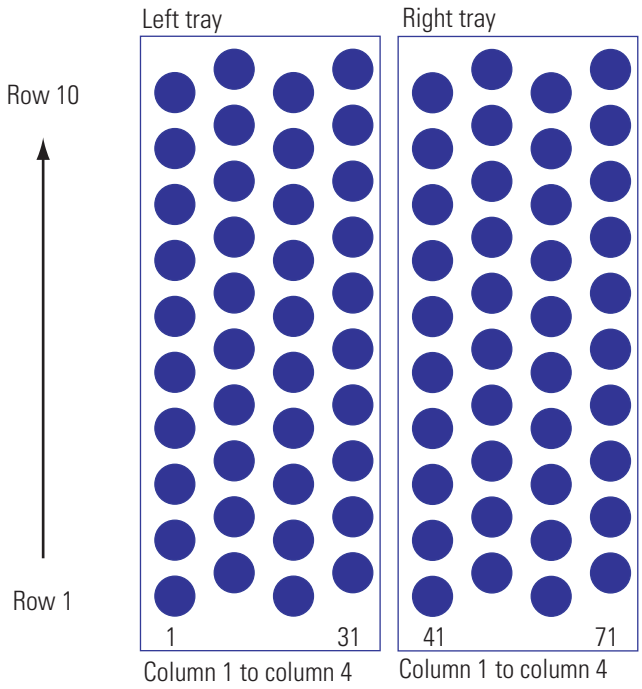
You can load two 40-vial trays into the tray compartment of the Agilent 1200 HiP-ALS. Xcalibur recognizes theses trays as the left and right trays.

Figure 23 shows the vial locations for the 40-vial trays.

When you create a sequence, you can type a vial location from 1 to 40 for a single tray or 1 to 80 for two trays.

If you turn on the wash option for an instrument method, you can specify a wash vial from 1 to 40 or 1 to 80 depending on whether you load one or two trays into the tray compartment.

Figure 23. Schematic of 40-vial trays



100-Vial Trays

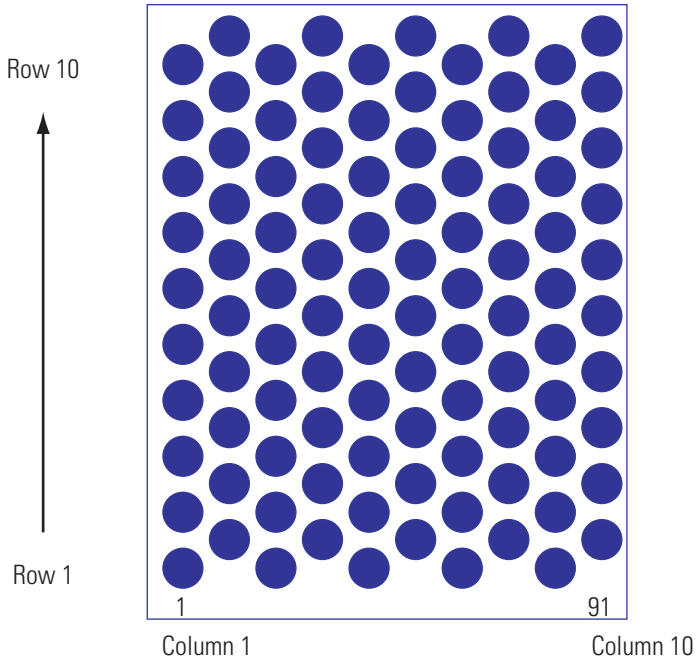
You can load one 100-vial tray into the tray compartment of the Agilent 1200 HiP-ALS. Xcalibur recognizes this tray as the left tray.

Figure 24 shows the vial locations for the 100-vial tray.

When you create a sequence, you can type a vial location from 1 to 100.

If you turn on the wash option for an instrument method, you can specify a wash vial from 1 to 100.

Figure 24. Schematic of the 100-vial tray



54-Vial Plates

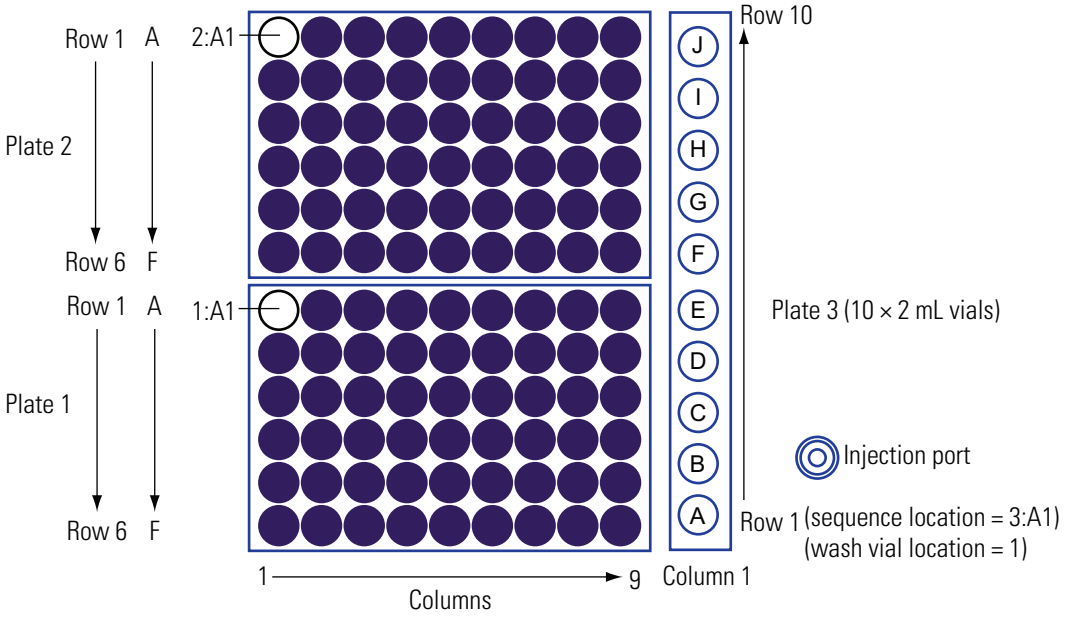
You can load two 54-vial plates into the tray compartment of the Agilent 1200 HiP-ALS. Xcalibur recognizes these plates as the front and back vial plates.

Figure 25 shows the vial locations 54-vial plate + 10 × 2 mL tray option with the factory default setting of Left/Back for the plate rotation.

When you create a sequence, you can type a vial location from 1:A1 to 3:J1. The vial locations for the vials in the vial plates are 1:A1 to 1:F9 for the front plate and from 2:A1 to 2:F9 for the back plate. The vial locations for the 10 vials in plate 3 are 3:A1 to 3:J1.

If you turn on the wash option for an instrument method, you can specify a "well" location from 1:A1 to 2:F9 or a reservoir location from 1 to 10.

Figure 25. Schematic of the 54-vial plate tray option with the plate rotation selection of Left/Back



96-Well Plates or 96-Deep Well Plates (Agilent Only)

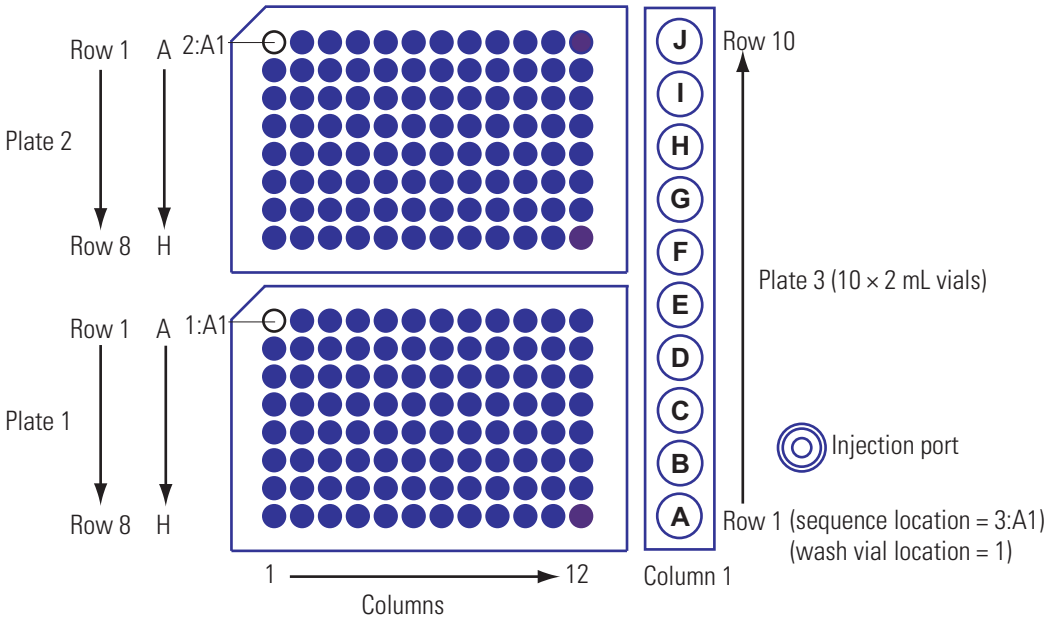
You can load two 96-well plates or 96-deep well plates into the tray compartment of the Agilent 1200 HiP-ALS. Xcalibur recognizes these plates as the front and back well plates in the left side of the tray compartment.

Figure 26 shows the well locations with the factory default setting of Left/Back for the plate rotation.

When you create a sequence, you can type a well location from 1:A1 to 1:H12 for the front well plate, from 2:A1 to 2:H12 for the back well plate, and from 3:A1 to 3:J1 for the vials.

If you turn on the wash option for an instrument method, you can specify a well location from 1:A1 to 2:H12 or a reservoir location from 1 to 10.

Figure 26. Schematic of the 96-well plate tray option with the plate rotation selection of Left/Back



384-Well Plates (Agilent Only)

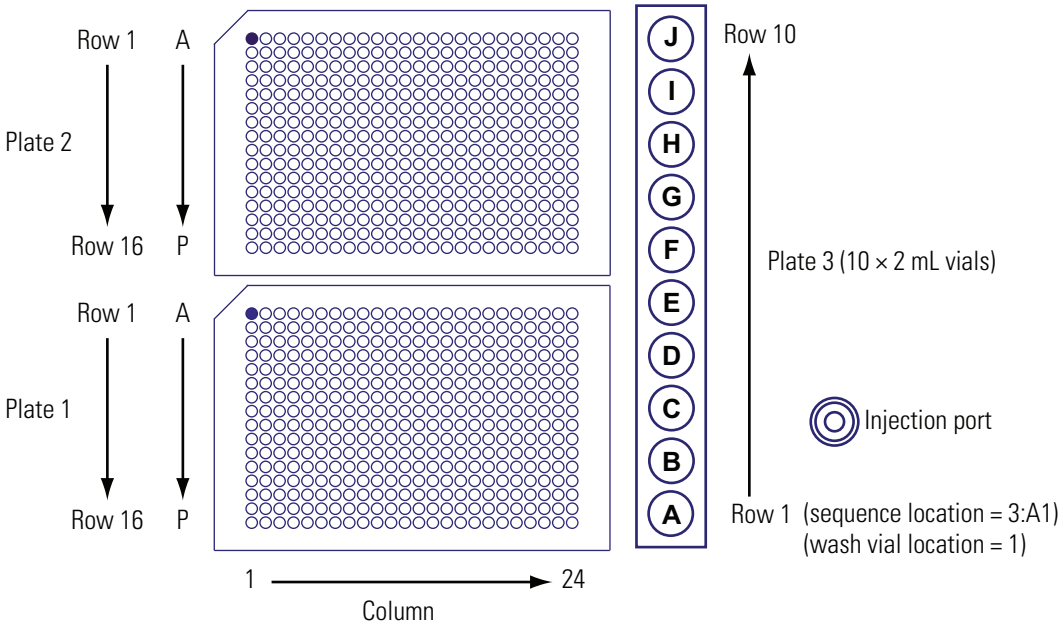
You can load two 384-well plates into the tray compartment of the Agilent 1200 HiP-ALS. Xcalibur recognizes these plates as the front and back well plates in the left side of the tray compartment.

Figure 27 shows the well locations for the 384-well plates (factory default setting of Left/Back) and the vial locations for the 2 mL vials.

When you create a sequence, you can type a well location from 1:A1 to 1:P24 for the front well plate, from 2:A1 to 2:P24 for the back well plate, and from 3:A1 to 3:J1 for the vials.

If you turn on the wash option for an instrument method, you can specify a well location from 1:A1 to 2:P24 or a reservoir location from 1 to 10.

Figure 27. Schematic of the 384-well plate tray with the plate rotation selection of Left/Back



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